United States Patent [19]

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[54] **CHLORINE DIOXIDE MONITOR BASED ON ION MOBILITY SPECTROMETRY WITH SELECTIVE DOPANT CHEMISTRY**

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Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 746,464, Aug. 16, 1991, Pat. No. 5,234,838, which is a continuation-in-part of Ser. No. 687,594, Apr. 17, 1991, Pat. No. 5,095,206, which is a continuation-in-part of Ser. No. 534,701, Jun. 1, 1990, Pat. No. 5,032,721.

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[58] Field of Search 436/124, 171, 173; 422/82.01, 82.02, 82.05, 83, 90, 98; 250/282, 286, 287, 288

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[57] **ABSTRACT**

An improved ion mobility spectrometer (IMS) and method for operating the same which enables analysis of chlorine dioxide in a mixture of gases which also includes the interferant chlorine. A controlled concentration of an amine such as methylamine is added to the air carrier gas stream prior to application of the carrier gas stream. The amine suppresses the chlorine peak, thereby improving the specificity of the IMS to chlorine dioxide. The IMS of the present invention also includes an improved membrane filter for pre-filtering chlorine, and a software algorithm for accommodating peak drift.

44 Claims, 3 Drawing Sheets